

CLAIMS

What is claimed is:

1. A power splitter device comprising:
  - a power input port;
  - at least three power output ports each having a separate, resettable overcurrent protection circuit, each said overcurrent protection circuit having its own maximum current rating; and
  - a port switch configured to provide power from said input port to selectable combinations of one or more said output ports, including at least one combination of two or more said output ports, and further configured to prevent power from being applied to all said output ports simultaneously.
2. A device in accordance with Claim 1 wherein said port switch is further configured to prevent power from being applied to any combination of said output ports having overcurrent protection circuits with maximum current ratings totaling more than a preselected maximum current.
3. A device in accordance with Claim 2, wherein said highest maximum current rating is equal to said preselected maximum current

4. A device in accordance with Claim 2, wherein:

one said overcurrent protection circuit is a high current circuit having a highest maximum current rating; and

said port switch is configured to provide current to said output port having the high current circuit only in combination with no other said output port.

5. A device in accordance with Claim 1 wherein said ports are selected from the group consisting of 12 VDC power connectors and ARINC 628 connection points.

6. A device in accordance with Claim 1 wherein said resettable overcurrent protection circuits are user-replaceable.

7. A power distribution system comprising:

- a power source configured to provide power to a plurality of seat connectors;
- a branch level overprotection circuit having a maximum current rating and providing overcurrent protection for current drawn in a branch of said system comprising a plurality of seat connectors; and
- a power splitter device having a power input port configured to receive power from one of said seat connectors, at least three power output ports each having a separate, resettable port level overcurrent protection circuit, each said overcurrent protection circuit having its own maximum current rating; and a port switch configured to provide power from said input port to selectable combinations of one or more said output ports, including at least combination of at least two said output ports, said port switch further configured to prevent power from being applied to all said output ports simultaneously.

8. A system in accordance with Claim 7 wherein said port switch is further configured to prevent power from being applied to any combination of said output ports having port level overcurrent protection circuit with maximum current ratings totaling more than a prorated seat connector share of said maximum current rating of one of said branch level overcurrent protection circuits.

9. A system in accordance with Claim 8, wherein said highest maximum current rating is equal to said prorated seat connector share.

10. A system in accordance with Claim 9, wherein:

one said port level overcurrent protection circuit is a high current circuit having a highest maximum current rating; and

said port switch is configured to provide current to said output port having the high current circuit only in combination with no other said output port.

11. A system in accordance with Claim 7 wherein said input port and said output ports are selected from the group consisting of 12 VDC power connectors and ARINC 628 connection points.

12. A system in accordance with Claim 7 installed on a mobile platform.

13. A system in accordance with Claim 12 wherein the mobile platform is an airplane.

14. A method for supplying power to a plurality of passenger devices at a passenger seat of a mobile platform, said method comprising:

selecting a combination of one or more output ports to be powered by the seat connector utilizing a port switch, wherein each output port has a separate overcurrent protection circuit having a maximum current rating, and wherein combinations selectable by the port switch include at least one combination of two or more output ports out of at least three output ports; and

restricting the port switch from selecting combinations of output ports having overcurrent protection circuits with maximum ratings having a total greater than a preselected maximum current.

15. A method in accordance with Claim 14 wherein the preselected maximum current is a prorated seat connector share, and further comprising the step of determining a prorated seat connector share.

16. A method in accordance with Claim 14 wherein the mobile platform is an airplane.

17. A method in accordance with Claim 14 further comprises replacing at least one of the overcurrent protection circuits with another having a different maximum current rating.